



High Plains

(Weather Information News Data)

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Photo Courtesy of
Julie Samuelson



A Message from the Meteorologist-in-Charge

2015 Severe Weather Season

By Scott A. Mentzer

We are well into spring, so severe weather is right around the corner. In fact, we've already experienced severe weather on April 2, 2015, when storms produced wind gusts in excess of 100 mph across Greeley and Wallace Counties in Kansas and a brief tornado in Cheyenne County, Colorado. These winds produced considerable damage and an impressive dust storm.



April 2, 2015 Dust Storm near Horace, Kansas
Photo by Mark Rine

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Common Weather Myths

By Jesse Lundquist

Warming temperatures and the greening vegetation serve as reminders that severe weather season is not far away. Below are some common myths and facts about severe weather to help you prepare for it this season. Are there any myths listed below that you thought were facts?



Myths about Lightning

- **Myth:** *If it is not raining and the sky above me is clear, there is no danger from lightning.*
- **Fact:** Lightning often strikes away from rainfall, and has been known to strike as far away as 10 miles from rainfall!
- **Myth:** *Rubber soled shoes or rubber tires on a vehicle will keep a person safe from a lightning strike.*
- **Fact:** Rubber soled shoes will not protect a person from being struck by lightning. If caught outdoors away from buildings, the safest place to be is a vehicle because its metal frame will guide the lightning around the occupant(s) and into the ground.
- **Myth:** *Since I am inside a building I am completely safe from a lightning strike.*
- **Fact:** Occupants in a building are still at risk of being struck by lightning. When lightning hits a building it can travel along anything metal, such as door frames, pipes, electrical wiring, or telephone lines. A person touching any of these is a risk of being struck by lightning, despite being inside!

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6/11/10 tornadoes near Hoxie

Myths about Tornadoes

- **Myth:** *The safest place to take shelter from a tornado while on the road is under an overpass.*
- **Fact:** If a person needs to take shelter from a tornado while driving, the safest place to be is below ground level such as a ditch. This will better shield the person from debris thrown by the tornado. Taking shelter under an overpass is very dangerous because the winds will be funneled through the underpass, causing them to speed up. Also, there is no protection under an overpass from debris picked up by the tornado.
- **Myth:** *Opening windows in a building ahead of an approaching tornado will keep the building from exploding due to the intense low pressure of the tornado.*
- **Fact:** Opening windows ahead of a tornado to equalize pressure will not protect a home. Buildings are damaged or destroyed by the violent winds and other debris in the tornado. A much better use of the short time before a tornado strikes is to take shelter in a central room in the lowest level or basement of the building.
- **Myth:** *Tornadoes always move from west to east or southwest to northeast.*
- **Fact:** While tornadoes generally move from west east or southwest to northeast, they can change direction and speed very quickly.

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Myths about Flooding

- **Myth:** *Flooding only occurs in streams and rivers.*
- **Fact:** Flooding can occur anywhere water is channeled from a large area into a much smaller area. Flooding can also occur in urban areas where no streams or rivers are present.
- **Myth:** *If water is running over a road it is still safe to drive through because the road does not appear to be damaged from the flood waters.*
- **Fact:** Flood waters can easily hide deep holes in the road.



During Flooding



After Flooding

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April 2, 2015 Dust Storm near Cheyenne Wells, Colorado
Photo by Kit Carson Sheriff's Office

This storm is a reminder about the power of spring and summer weather across the United States. The nation experiences 26,000 severe thunderstorms, 1,300 tornadoes, and 5,000 floods each year. This high impact weather also kills 500 people and produces around 15 billion dollars in damage.

The National Weather Service and its partners are building a Weather Ready Nation. This means that communities and individuals are ready for severe weather, responsive to warnings and other weather information, and resilient if storms impact your area. Now is the time to review severe weather plans to prepare for this year's storms.

Further information about becoming Weather Ready is found elsewhere in this newsletter or at:

<http://www.nws.noaa.gov/com/weatherreadynation/>

Safety rules for severe thunderstorms, tornadoes, and lightning are found at:

<http://www.nws.noaa.gov/om/severeweather/index.shtml>

Winter Snowfall and Predicting Summer Weather

By Mike Kochasic

An intriguing forecast question asks, “Does the amount of snowfall we received over the winter indicate how much rainfall we will receive during the spring and summer?” Access to climate data will help to determine if precipitation during the two seasons are correlated.

For this quick study, 30 years of data (1981-2010) were analyzed for the snowfall in the winter season (October through April) and the rainfall in the spring and summer season (April through October) for the city of Goodland, KS. Figure 1 shows 30 years of winter season snowfall (blue) compared to the summer rainfall received (red). The average snow for the same winter period (peach) and the average rainfall for the same summer period (green) are also shown. When a below (or above) average snowfall was recorded for the winter, 16 out of 30 years (53%) also had a below (or above) average rainfall recorded for the summer. However, 14 years within the 30 years examined (47%) did not show the same correlation of above or below normal precipitation. Based on the years between 1981 and 2010, it does not appear that the amount of snowfall received during the winter months had a strong correlation on how much rainfall was received during the summer.

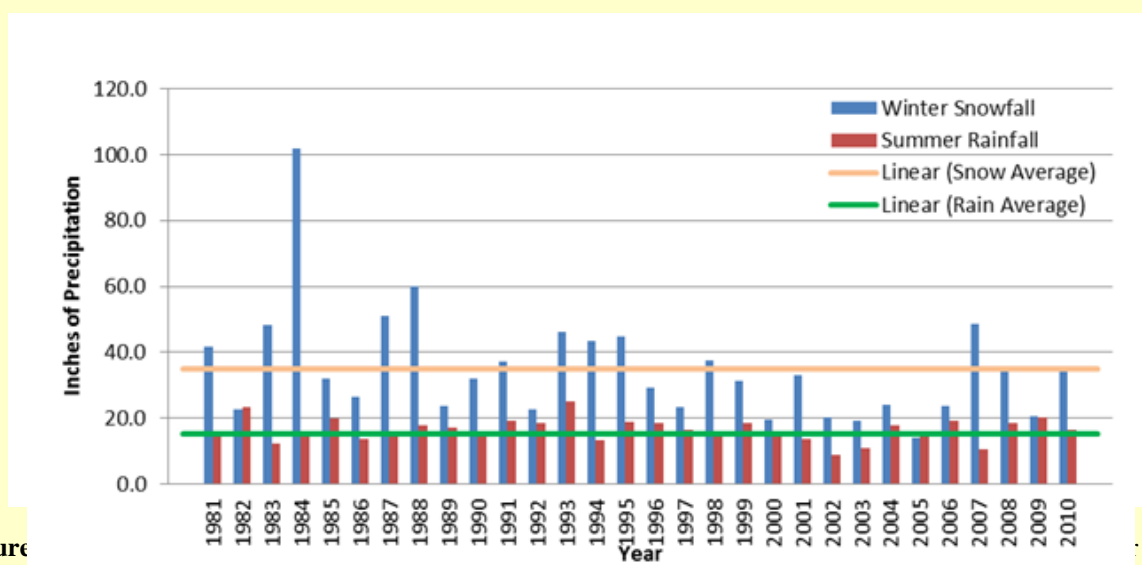


Figure 1

(April to October) between 1981 and 2010 for the city of Goodland.

season

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How about another question: can the amount of snowfall predict the amount of severe weather in the upcoming spring and summer? Looking at even more data, snowfall during the winter season was analyzed for one site in each of our 19 counties for which we issue forecasts and warnings. This snowfall was averaged for 19 locations and compared to the occurrence of wind, hail, and tornadoes in the form of scatter plots (Figure 2). To understand the scatter plot, you first have to understand trend lines and the R² statistic. Basically, the trend line is a line that shows the trend in the data. As with each chart within Figure 2, the trend line is pointing downward (except for tornadoes; the line is nearly horizontal). A downward trend line indicates that there is a slight negative relationship in the datasets. In other words, an increased amount of snow on average across all 19 counties would lead to a decreased amount of severe weather.

However, the R² statistic must be also considered. The R² value indicates how well the plotted points are correlated with each other. A value of 1 would indicate that the points follow the trend line perfectly; where a score of 0 means that the points are completely unrelated. In the plots in Figure 2 (except for tornadoes), the R² values are greater than zero, so there may be some relationship present. The values are also much less than one, so a strong relationship is

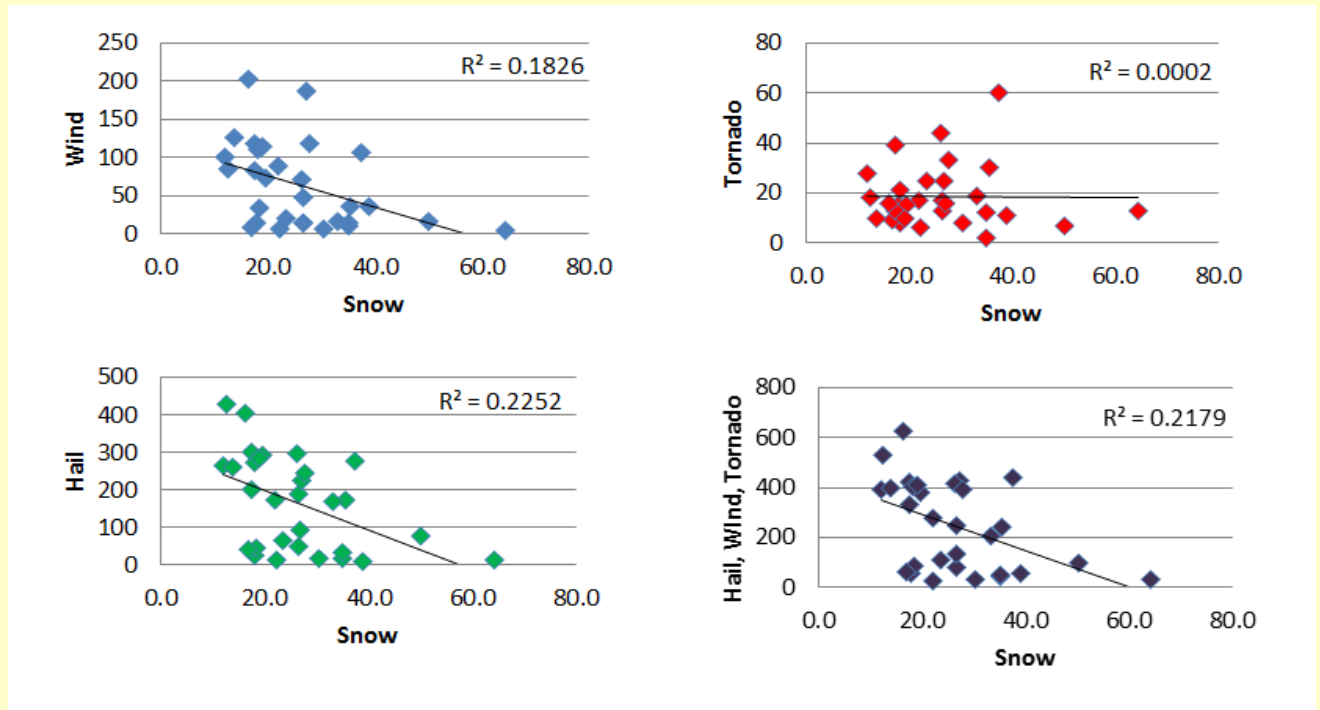


Figure 2. The relationship of snow amount during the winter to the occurrence of wind (blue), hail (green), tornadoes (red), and the combination of the three (purple) during the summer months for the Goodland County Warning Area.

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absent. In the case of tornadoes (red), a near zero relationship indicates that snow does not have any noticeable relationship with the amount of tornadoes that occur in the following summer season.

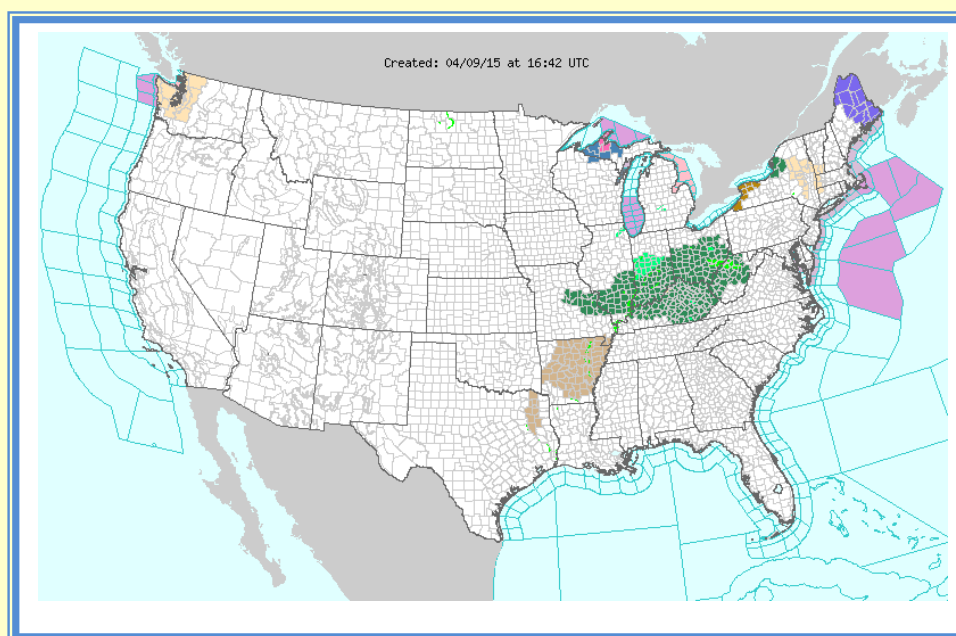
Unfortunately, the amount of snowfall received during the winter months is not a great predictor of what kind of weather is on the horizon for the summer. This may be a good thing being that Goodland has only received 22.7 inches of snow (as of this writing) for the winter season, which is about 7 inches below normal. Based on the scatter plots in Figure 2, this past winter's snow could lead to a wide range of rainfall outcomes and severe weather possibilities for this upcoming summer. It does appear that during years where snowfall was above average, severe weather seemed to decline. Will we have higher amounts of severe weather across the area? Will we see below average rainfall this spring and summer? Time will tell, and we will find out soon enough.



***Check out our website for more information
or catch up with us on Facebook or Twitter***



Pictured above is Rodney Nelson, one of the two electronics technicians at our office. Rodney recently completed intensive training at the National Weather Service Training Center in Kansas City, Missouri.



Click on the photo above or go to our website www.weather.gov for all the latest Watches and Warnings.

CoCoRaHS Corner

By David Thede

The CoCoRaHS program recently received a grant that will provide nearly all 5th grade students in Yuma County with a CoCoRaHS rain gauge. So far, approximately 35 new observers have joined the CoCoRaHS program from Yuma county and more are likely. Welcome to our new observers.

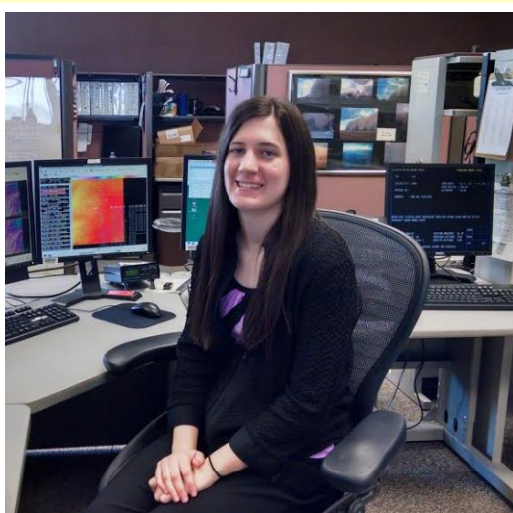
These observers will be added to the approximately 150 additional observers in far eastern Colorado, northwest Kansas and extreme southwest Nebraska.

If you are interested in participating in the CoCoRaHS program and can reliably report precipitation data whether it's daily when some or none fell or just on days when precipitation fell, we would be interested in having you join us.



<http://www.cocorahs.org/>

Interested volunteers should contact the Northwest Kansas/East Central Colorado and Southwest Nebraska **CoCoRaHS** Coordinator, David Thede of the National Weather Service in Goodland. He can be reached at (785) 899-7119 or at david.thede@noaa.gov.



Our office recently welcomed two new staff members. **Jessica Hill** and **Timothy Lynch** both began work in our office in March. They both bring valuable skills that are a welcome addition to our staff of weather professionals!

Cooperative Observer News

Reminder for Cooperative Observers

If you have a standard 8-inch rain gauge it is time to place the inner measuring tube and funnel inside the gauge. This will make observing easier and keep moisture from evaporating.

As always, if you have any questions or concerns about your equipment or reporting procedures, please give our office a call. We can be reached at 800-272-7811 any time.

Thanks so much for your reports. Although we may not say it often enough, we truly appreciate all you do!



Pictured above on the front row on the right is our very own Brian Warren. Brian is anxious to meet with all of you in the months ahead. He will look forward to visiting your station soon.



Be a Force of Nature

Help Build a Weather-Ready Nation™

Do you know what to do in a severe weather emergency? Each year, people in this country are killed or seriously injured by all types of extreme weather, despite advance warning.

NOAA's Weather-Ready Nation (WRN) initiative is about helping our nation become more resilient to increasing extreme weather, water and climate events. NOAA is working to keep these threats from becoming disasters with greater accuracy in forecasts and warnings, evolving services to community decision makers, and better ways to communicate risk to stakeholders and the public.

As part of the WRN initiative, NOAA partners with emergency management officials, businesses, and the media to motivate individuals and communities to prepare for a potential weather disaster. And these actions can save lives – at home, in schools, and in the workplace.

What Does a Weather-Ready Nation Look Like?



A Weather-Ready Nation takes well-informed communities, businesses and individuals that are ready, responsive and resilient to extreme events. Key actions include:

- **Know your risk** by discovering the weather risks where you live and closely following National Weather Service forecasts and warnings.



- **Take action** by creating a family emergency plan and kit, and making sure you can receive emergency messages (e.g., NOAA Weather Radio, wireless emergency alerts).
- **Be an example** by using social media to share important hazard information.

How Your Organization Can Help Build a Weather-Ready Nation

Building a WRN requires the participation and commitment of a vast nationwide network of "Ambassadors" – organizations contributing in the best ways they can:

- Broadcasters advocating preparedness on-air
- Schools/universities teaching about the risks associated with severe weather and resiliency best practices
- Companies within the weather enterprise building the technological infrastructure for weather information and alerts
- Insurance companies providing discount incentives to policyholders who meet certain mitigation criteria

By becoming a **WRN Ambassador**, your organization can serve a pivotal role in affecting societal change by:

- Promoting Weather-Ready Nation messages
- Collaborating with NOAA
- Sharing your success stories
- Serving as an example



www.noaa.gov/wrn

For more information check out the link at:
<http://www.nws.noaa.gov/com/weatherreadynation/>

We Need Your Help!

By Jesse Lundquist

With severe weather season approaching, it's time for us to ask for your help with reporting severe weather. Our radar can't tell us what is reaching the ground, which is why your weather reports are so important! By letting us know what the weather is doing at your location, you are helping us protect lives and property. Below is a list of what we are looking for:

- Your location from the nearest town and the location of the report (if different).
- The size of the largest hailstone in relation to a coin (or common athletic balls if bigger).
- Wind gusts of 60+ MPH.
- Rotating wall clouds, funnel clouds, tornadoes.
- Rainfall amounts of 1"+ per hour.
- Any areas where there is 6"+ of water over the road or damage from flooding.
- Damage and injuries from the storm.
- Low visibility (< ¼ mile) from blowing dirt.
- Start time, end time, and duration of any of the above events.



6/20/11 Tornado near
Quinter, KS

Even though weather reports are very important to us, your safety is top priority. If the weather is too dangerous for you to go outside, please wait until the storm passes. Delayed reports are just as important to us. Your weather reports can also be sent to us by phone or through social media. With your help we can keep the public better informed when the weather becomes hazardous. Thank you in advance for your help this severe weather season.



6/14/14 Softball size hail
in Rexford, KS

NOAA Weather Radio Transmitter Upgraded

By Scott Mentzer

Through the efforts of Yuma County Emergency Manager Roger Brown and the National Weather Service, NOAA Weather Radio transmitter WXM-87 in Wray, Colorado, was upgraded to 300 watts on February 10, 2015. The transmitter was previously running 100 watts. The signal produced by the transmitter now covers most of western Yuma County, and signal improvement was also noted as far southeast as Saint Francis, Kansas.



NOAA Weather Radio Transmitter in Wray, Colorado

After acquiring funding through the Department of Homeland Security, Mr. Brown spent many years working with the transmitter manufacturer to secure the updated equipment. His determined efforts made certain that the citizens of Yuma County, Colorado; western Dundy County, Nebraska; and parts of Cheyenne County, Kansas, received better NOAA Weather Radio coverage.

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Technicians Ron Kilgore and Grady Bonsall finalizing the transmitter installation

Interesting Reading



Often we receive interesting information from other agencies and universities.
Here are a couple articles that you might enjoy.

One was on “playa lakes” and how they impact the environment in our area. Learn more at:

<http://www.kgs.ku.edu/Publications/PIC/pic30.html>

The second was on the effect of drought and other stresses on the winter wheat crop. Check it out at:

<http://cropwatch.unl.edu/2015-wheat-winterkill>

Cheyenne County Kansas is StormReady!

By David Floyd

Approximately 98% of all presidentially declared disasters are weather related, leading to around 500 deaths per year and nearly \$15 billion in damage. **StormReady** is a program which helps arm America's communities with the communication and safety skills needed to save lives and property--before, during and after the event. **StormReady** helps community leaders and emergency managers strengthen local safety programs.

StormReady communities are better prepared to save lives from the onslaught of severe weather through advanced planning, education and awareness. While no community is storm proof, **StormReady** can help communities save lives.

On February 20, 2015, Cheyenne County was officially recognized as becoming StormReady. The program provides guidelines for helping communities become better prepared to deal with hazardous weather through training, outreach and education. A StormReady county is proactive in helping protect its citizens by having the infrastructure in place to rapidly receive and disseminate hazardous information. This includes redundant ways to receive weather warnings, monitor current conditions and notify residents of threats using the latest technology.

Congratulations to Ryan Murray (Cheyenne County Emergency Manager) and all those in Cheyenne County who helped make this possible!

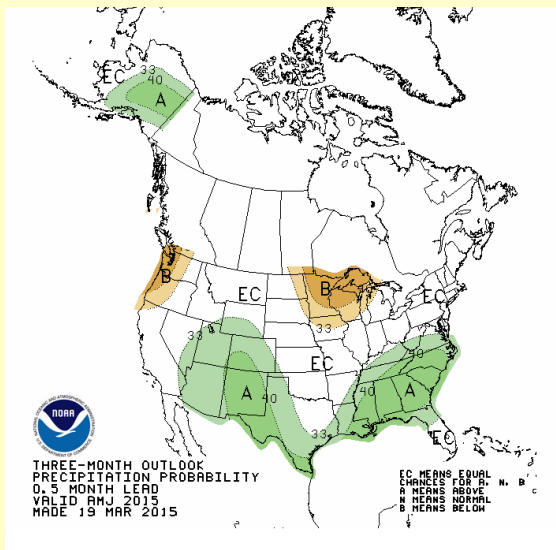


Dave Floyd (left) Warning Coordination Meteorologist at the National Weather Service office in Goodland, presents Ryan Murray (right) Cheyenne County Emergency Manager with a "We Are StormReady" sign on the steps of the Cheyenne County courthouse.

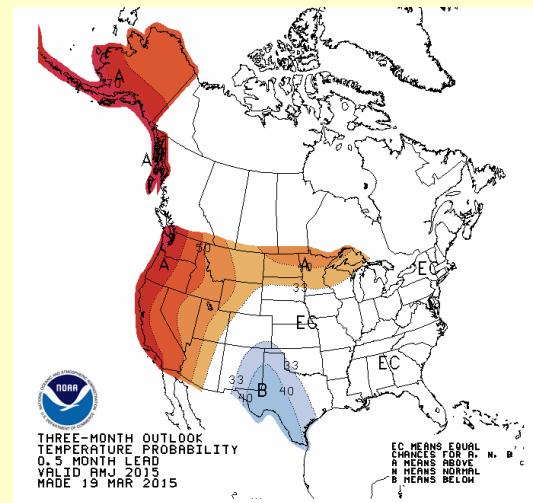
Other StormReady counties in the Tri-State area include Yuma, Kit Carson and Cheyenne Counties in Colorado, and Sherman and Thomas Counties in Kansas.

Climate Corner

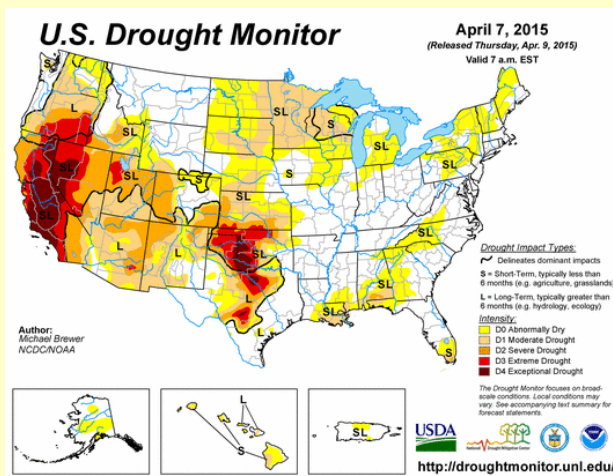
Current Weather Information for Our Area Latest Extended Outlooks



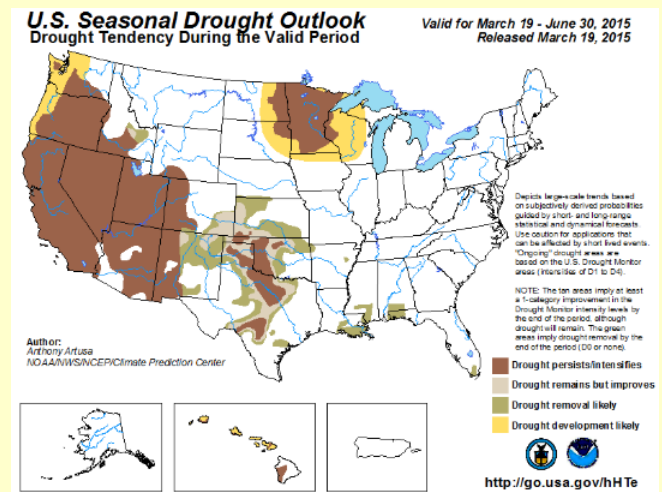
Precipitation Outlook (April - June 2015)



Temperature Outlook (April - June 2015)



Current Drought Monitor



Drought Outlook

Need more information? Check out the Climate Prediction Center website at: <http://www.cpc.ncep.noaa.gov/>

Site	Year-to-Date Precipitation*	Departure from Normal
Burlington	1.75	-.32
Goodland	1.81	-.67
Hill City	.71	-2.59
McCook	.78	-2.44

*As of April 12, 2015

National Weather Service

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w-gld.webmaster@noaa.gov

Website:
<http://www.weather.gov/gld>

Facebook:
<http://www.facebook.com/nwsgoodland>

Twitter:
<https://twitter.com/NWSGoodland>

*Please don't forget, if you
have pictures or video to
share of any severe weather
events that take place this
year, please contact
david.l.floyd@noaa.gov*



*With your permission, your
pictures and video will
provide information and
training materials for future
storm spotters and
meteorologists!*

The **National Weather Service** provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community. It is accomplished by providing warnings and forecasts of hazardous weather, including thunderstorms, flooding, hurricanes, tornadoes, winter weather, tsunamis, and climate events. The NWS is the sole United States OFFICIAL voice for issuing warnings during life-threatening weather situations.